# Resolution 18-266, CD1
# Additional Testimony

Chamber of Commerce HAWAII
*The Voice of Business*

**Testimony to the Honolulu City Council**
**Friday, March 8, 2019 at 10:00 A.M.**
**City Council Chamber, Honolulu Hale**

**RE: RESOLUTION 18-266 CD1, RED HILL BULK FUEL STORAGE FACILITY**

Interim Chair Kobayashi, Vice Chair Menor and Members of the Council:

The Chamber of Commerce Hawaii ("The Chamber") **is opposed to** Resolution 18-266 CD1, which urges the U.S. Environmental Protection Agency and the State of Hawaii Department of Health to reject the approval of a single wall tank upgrade alternative option for the Red Hill Bulk Fuel Storage Facility. This resolution also calls for the rejection of conclusions presented in the Groundwater Protection and Evaluation Considerations for the Red Hill Bulk Fuel Storage Facility Report from July 27, 2018.

The Hawaii Military Affairs Council (MAC) was established in 1985 as part of the Chamber, and advocates on behalf of Hawaii's military, and is comprised of business leaders and retired U.S. flag and general officers. The MAC works to support Hawaii's location as a strategic U.S. headquarters in the Indo-Asia-Pacific region.

In recognizing how critical the U.S. military presence is to Hawaii's economy, the Chamber underscores that the Red Hill fuel facility is vital to military readiness as it supports all Hawaii-based military actions and a significant share of many more in the Indo-Asia-Pacific region. The military's ability to remain "ready to respond" is essential for preserving the military's presence in the State and protecting a vital driver of our State's economy.

The Administrative Order on Consent (AOC) is a binding order between the Navy, U.S. Environmental Agency and the Hawaii Department of Health which resulted from the January 2014 fuel leak. The AOC convened state and federal experts to research and evaluate structural upgrades to the existing tanks at Red Hill and help to determine a long-term solution. The Navy's Tank Upgrade Alternatives Report summarized dozens of technologies that were considered to improve the storage tanks and provided detailed conceptual design information for six upgrade options being considered. Additional monitoring is in effect, as well as the integration of additional technologies to help ensure the integrity of the system. The Council should allow the AOC to finalize its recommendations before any further action is taken. In addition, the State Department of Health is in discussions with the Navy about the long-term future of Red Hill and other alternatives. Those discussions are also ongoing.

Thank you for the opportunity to testify in opposition to Resolution 18-266.

733 Bishop Street, Suite 1200 • Honolulu, Hawaii 96813 • Phone: (808) 545-4300 • Facsimile: (808) 545-4369

# SIERRA CLUB OF HAWAI'I

**MĀLAMA I KA HONUA. *Cherish the Earth.***

**COMMITTEE ON PUBLIC INFRASTRUCTURE, TECHNOLOGY, & SUSTAINABILITY**

February 27, 2019 2:00 PM

**In SUPPORT of 18-266 CD1**

Urging EPA and DOH to Reject Single-wall Upgrade to Red Hill Fuel Tanks

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Aloha Chair Fukunaga, and members of the PITS committee,

On behalf of our 20,000 members and supporters, the Sierra Club of Hawai'i **strongly supports Resolution 18-226 CD1** urging the U.S. Environmental Protection Agency and Hawai'i Department of Health to reject the U.S Navy's proposal to maintain the Red Hill Bulk Fuel Storage Facility in place without secondary containment, reject the U.S. Navy's Groundwater Protection and Evaluation Considerations report published July 27, 2018, and support the relocation of the fuel storage facility if secondary containment cannot be implemented.

In addition to the testimony presented to the committee on February 26, 2019, we offer this additional information regarding the relocation study conducted by the Navy in February 2018[1].

Included with this testimony are excerpts from the alternative locations analysis that summarize the several locations considered by the Navy. In our review of the minimum requirements of the facility and locations evaluated, it appears that the Navy-Marine Golf Course (site B) is a very viable option that warrants additional in-depth consideration.

Key to our preliminary conclusion that the Navy-Marine Golf Course site is preferable to relocating the fuel immediately uphill from the Red Hill facility is the fact that the Navy-Marine Golf Course is located well below the underground injection control (UIC) line. The UIC line was established by the Hawai'i Department of Health in 1992 (Haw. Admin. Rules §11-23) to guide development decisions so as to avoid negative impacts to groundwater resources. Being located below the UIC line means the proposed project is not over a source of groundwater. From our perspective, ensuring future fuel tanks are not located directly over our drinking water supply is the most important factor to be considered in the decision to relocate the fuel storage tanks.

Because the Navy is adamant that secondary containment is not possible at the current facility, the Red Hill fuel tanks should be abandoned and the fuel relocated to a safer facility.

Thank you very much for this opportunity to provide testimony in **support.**

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[1] The Navy's analysis of alternative locations can be found online at: https://www.epa.gov/sites/production/files/2018-03/documents/red_hill_alternative_location_study_5_february_2018_redacted.pdf

# 3.0 ALTERNATIVE SITE SELECTION

## 3.1 General

As noted in the previous section, there are numerous constraints that limit where the alternative site can be located. These constraints also lead to several tank construction related facts that impact where the alternate location could be sited:

- The tanks will need to be constructed underground using the DoD standard underground vertical (cut-and-cover) storage tank design and provided with the equivalent of 100 feet of earth cover to comply with the physical protection requirement.
- It will take 40 tanks at 150,000 bbl each to provide the requested 250,000,000 gallons of storage. The approximate dimensions of each steel tank will be 150 feet in diameter by 52 feet in height.
- The tank bottom must be at or above an elevation of 10 feet to stay out of the water table and at an elevation of 150 feet or more in order to gravity feed Joint Base Pearl Harbor Hickam (JBPHH). If the tanks cannot be installed with their bottoms above 150 feet, then alternative power sources would need to be provided.
- Considering the required 100 feet of earth cover, the tank height of 52 feet and the minimum tank bottom elevation of 150 feet for gravity feed, the natural site minimum elevation should be at least 300 feet.

## 3.2 Potential Sites Considered

In order to find an alternate location, the initial step was to select multiple potential sites that showed promise. The potential sites were identified upon the basic conditions that the site should be at least 50 acres in size, should not be located in a high value/densely developed site, and it should make common sense to be a fuel tank farm site.

The following 12 potential sites were ultimately investigated:

- Site A – Hickam Field
- Site B – Navy-Marine Golf Course
- Site C – Makalapa Crater Military Housing Area
- Site D – Salt Lake District Park
- Site E – Aliamanu Military/Coast Guard Reservation
- Site F – Quarry
- Site G – Kapūkaki

- Site H -Adjacent to Tripler Army Medical Center
- Site I -Adjacent to Fort Shafter
- Site J -Campbell Industrial Park
- Site K -Lualualei Naval Magazine
- Site L -NAVFAC Hawaii Facilities (between Marshall Road. and Namur Road)

### 3.3 Location Maps

The 12 potential sites are shown on the following maps:

1. General Vicinity Map -Oahu
2. Potential Sites -JBPHH Map
3. Potential Sites -Campbell Industrial Park Map
4. Potential Sites -Lualualei Naval Magazine Map

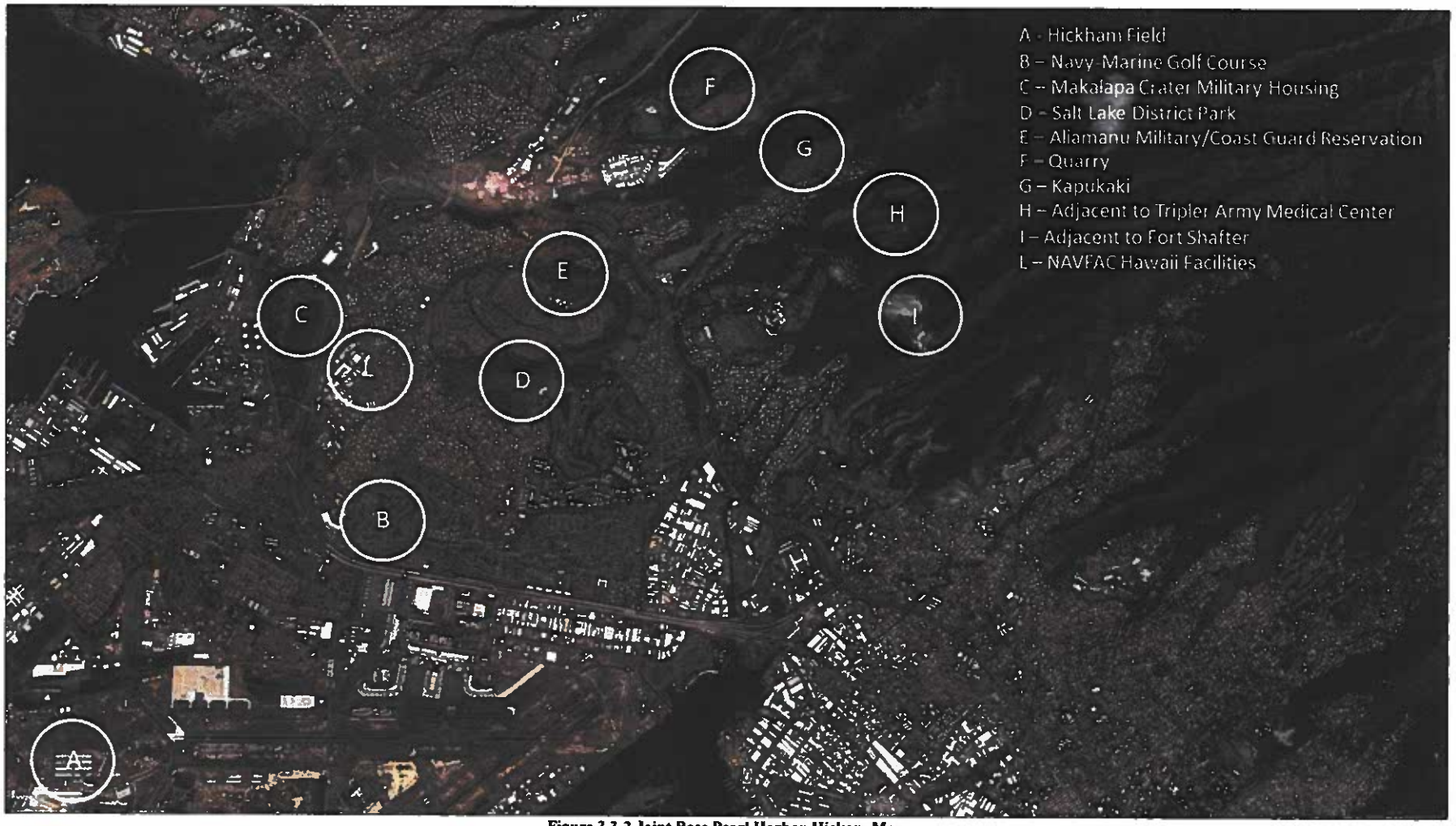


**Figure 3.3-2 Joint Base Pearl Harbor-Hickam Map**

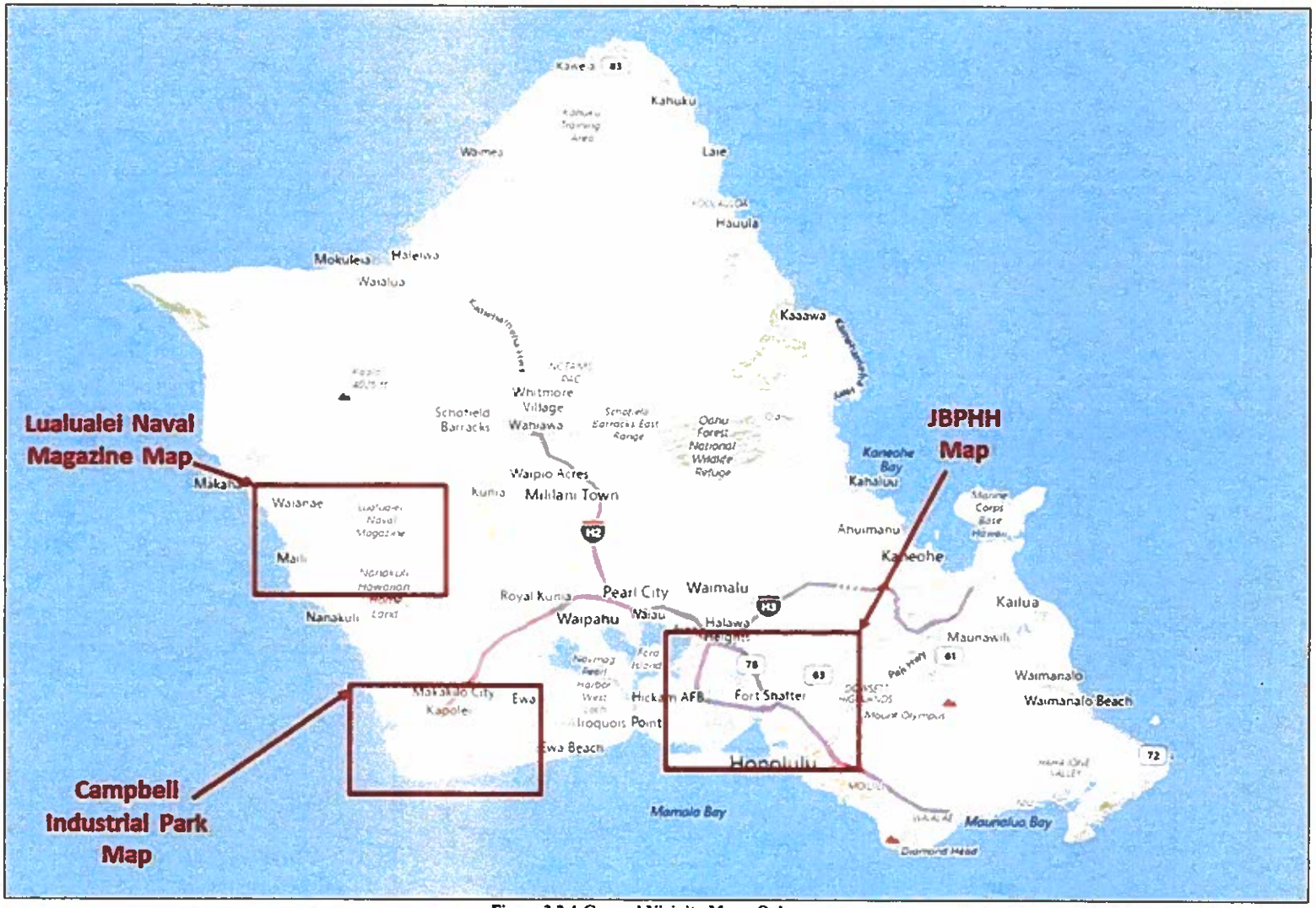


**Figure 3.3-1 General Vicinity Map Oahu**

## 3.5 Alternate Site Selection

The result of the scorecard analysis indicates Site G -Kapūkaki as the best alternative site. The Kapūkaki site is the best choice for multiple reasons while all of the other sites have at least one or two significant weaknesses that make them less favorable. A summary of the basic advantages and disadvantages for each site are as follows.

- Site A -Hickam Field

  The Hickam Field site has the available real estate, the land use would not conflict with the surroundings, and it is conveniently located on DoD property. However, the low elevation of the site would require significant fill material to build up the site and necessitate a engine-driven pumping system. These two items alone would add significant and insurmountable increases to the cost, duration, and carbon footprint when compared to Site G -Kapūkaki. The site is also adjacent to one of the active runways, so it may be impossible to raise the site and comply with the airfield clearance criteria.

- Site B -Navy-Marine Golf Course

  The positives for the golf course site are that it is on DoD property, and it has the needed real estate. Unfortunately, a fuel tank farm would not fit well with the surrounding land uses, and the site has all of the same low elevation issues as Site A - Hickam Field.

- Site C -Makalapa Crater Military Housing Area

  This DoD property has available greenspace, but does not have the required real estate. The site also has the same low elevation issues as Site A -Hickam Field, plus it would require the demolition of the historic military housing.

- Site D -Salt Lake District Park

  The only positive for the Salt Lake District Park location is that it sits on the southwest edge of a caldera which would provide some natural cover for the underground tanks. The fact that it is local public park is sufficient reason enough to reject it as viable location. In addition, the available real estate is too small, and the site is not high enough to gravity feed JBPHH.

- Site E – Aliamanu Military/Coast Guard Reservation

  This site sits on the northeast edge of the same caldera as the Salt Lake District Park location, but it is on DoD property. In addition, the pipeline tunnel to JBPHH runs along the northern edge of the site. While these are positive attributes, there is insufficient real estate, and the site is not high enough to gravity feed JBPHH.

- Site F -Quarry

  The commercial quarry to the north of Red Hill would be an ideal alternate location. Regrettably, the quarry is one of only two active quarries on the island making it an unlikely candidate.

- Site G -Kapūkaki

  This site is the best choice for many reasons, which include: it sits on DoD property; the site fits well with the surrounding land uses; it will gravity feed to JBPHH; it is adjacent to the pipeline tunnel to JBPHH; the excess spoils can be used to fill the existing RHBFSF's tanks and it has the smallest construction carbon footprint of the potential sites. The only potential negative is its proximity to a nearby drinking water well, but the proven reliability of the underground vertical (cut-and-cover) storage tank's leak detection and secondary containment systems should alleviate any concern.

  As noted above, one of the most significant advantages of selecting Site G is the lower carbon footprint. This is primarily due to three factors: no fill/borrow material is required to build up the site; there are no significant pipelines/tunnels to construct; and the excess excavation spoils can be used to fill the adjacent RHBFSF's tanks. These are just a few examples of using sustainable best management practices as outlined in ASTM E2876-13, Standard Guide for Integrating Sustainable Objectives into Cleanup, to help determine the best site.

- Site H -Adjacent to Tripler Army Medical Center

  The greenspace area in the higher elevations adjacent to the Tripler Army Medical Center would be a worthy site if it was on DoD property and closer to the existing pipeline tunnel to JBPHH.

- Site I -Adjacent to Fort Shafter

  Similar to Site H, this site would be a worthy option if it was on DoD property and closer to the existing pipeline tunnel to JBPHH. In the case of Fort Shafter, the topography is not as flat, and it is farther away from the pipeline tunnel, so it scored lower than Site H.

- Site J -Campbell Industrial Park

  The Campbell Industrial Park was investigated as an alternative site for one main reason: it matches the surrounding land use perfectly. Otherwise, it does not have many attributes that make it a reasonable choice. For instance, the low elevation of the site would require significant fill material to build up the site and necessitate an engine-driven pumping system. In addition, a new 15-mile, fortified/hardened pipeline tunnel would need to be built along the prescribed energy corridor. These

two items by themselves add significant and insurmountable increases to the cost, duration, and carbon footprint when compared to Site G -Kapūkaki.

- Site K -Lualualei Naval Magazine

  The Lualualei Naval Magazine has a few more positive attributes over Site J, such as it is on DoD property and has ahigh enough elevation for gravity feed to JBPHH. However, it is significantly worse than Site J, because it would require a new 25-mile, fortified/hardened pipeline tunnel. In addition to the pipeline tunnel being longer, the final 10 miles would not be in the already established energy corridor, adding to the cost, duration, and carbon footprint. Lastly, the site could be inside the explosive safety quantity distance (ESQD) making it even less desirable.

- Site L -NAVFAC Hawaii Facilities (between Marshall Road and Namur Road)

  The NAVFAC site's main attribute is that it sits on DoD property and is close to the existing access/pipeline tunnel. Unfortunately, there is not enough available real estate, it would require the relocation of the current NAVFAC functions, the land use would conflict with the surroundings, and the elevation is too low for gravity feed to JBPHH. Therefore, the cost, duration, and carbon footprint are less favorable when compared to Site G -Kapūkaki.

**From:** CLK Council Info
**Sent:** Thursday, March 07, 2019 4:44 PM
**Subject:** Council/Public Hearing Speaker Registration/Testimony

# Speaker Registration/Testimony

| | |
|---|---|
| Name | Rona L Holub |
| Phone | 9174886994 |
| Email | ronaholub@gmail.com |
| Meeting Date | 03-08-2019 |
| Council/PH Committee | Council |
| Agenda Item | Resolution 18-266 CD1 |
| Your position on the matter | Support |
| Representing | Self |
| Organization | |
| Do you wish to speak at the hearing? | No |
| Written Testimony | As Sierra Club notes: The Red Hill tanks at installation were 6mm... thinner than your iPad then and as thin as 3mm now. The tanks have corroded over 75 years and will continue to do so. Doesn't it make sense to build either a tank within a tank or build brand new tanks away from our water? Please do the right thing and consider the health and welfare of the people and the islands! There is no question what you must do! I worry especially for the Keiki. Water is life! |
| Testimony Attachment | |
| Accept Terms and Agreement | 1 |

**From:** CLK Council Info
**Sent:** Thursday, March 07, 2019 9:42 PM
**Subject:** Council/Public Hearing Speaker Registration/Testimony

# Speaker Registration/Testimony

| | |
|---|---|
| Name | Jan Pappas |
| Phone | 8083831988 |
| Email | jpappas60@gmail.com |
| Meeting Date | 03-08-2019 |
| Council/PH Committee | Council |
| Agenda Item | Resolution 18-266,cd1 |
| Your position on the matter | Support |
| Representing | Self |
| Organization | |
| Do you wish to speak at the hearing? | No |
| Written Testimony | Dear Chair and CouncilMembers,<br>There is no way to allay the fear of imminent disaster from the Red Hill fuel tanks as long as these 75-year-old, single-walled, corrosion-prone tanks holding millions of gallons of fuel sit atop Oahu's major source of fresh water. Such a disaster is unthinkable, akin to a nuclear attack. Please heed the counsel from the experts (Ernest Lau and his team at the Board of Water Supply) and insist that new, double-walled tanks meeting all current specifications for underground fuel tanks be constructed—preferably in a completely different location.<br><br>Yes, this solution is very costly, but the StarAdvertiser said it best: Oahu's aquifer is the only one of its kind here; and, since it cannot be relocated or replaced, it is priceless.<br><br>Please pass Resolution 18-266 unanimously, sending the strongest possible message from Honolulu and Oahu to the U.S. Navy.<br><br>Mahalo,<br>Jan Pappas |
| Testimony Attachment | |
| Accept Terms and Agreement | 1 |

**From:** CLK Council Info
**Sent:** Thursday, March 07, 2019 9:45 PM
**Subject:** Council/Public Hearing Speaker Registration/Testimony

# Speaker Registration/Testimony

| | |
|---|---|
| Name | Ronald H Yasuda |
| Phone | (808)428-0099 |
| Email | iamretiredmc@gmail.com |
| Meeting Date | 03-08-2019 |
| Council/PH Committee | Council |
| Agenda Item | Resolution 18-266 |
| Your position on the matter | Support |
| Representing | Self |
| Organization | |
| Do you wish to speak at the hearing? | No |
| Written Testimony | I would support double wall containment or relocation of fuel tanks. These fuel tanks have never conformed to the current underground requirements. The possibility of fuel spilling into our aquifers should never be left to chance. |
| Testimony Attachment | |
| Accept Terms and Agreement | 1 |

**From:** CLK Council Info
**Sent:** Friday, March 08, 2019 6:27 AM
**Subject:** Council/Public Hearing Speaker Registration/Testimony

# Speaker Registration/Testimony

| | |
|---|---|
| Name | Jim Pallett |
| Phone | 437-971-4290 |
| Email | pallett.jim@gmail.com |
| Meeting Date | 03-08-2019 |
| Council/PH Committee | Council |
| Agenda Item | Remove navy waste |
| Your position on the matter | Support |
| Representing | Self |
| Organization | |
| Do you wish to speak at the hearing? | No |
| Written Testimony | Meeting date: 3/8/2019<br>Council/PH Committee: Council/public hearing<br>Agenda Item: Resolution 18-266 CD1<br>Position: Support<br><br>Aloha Chair Kobayashi, Vice Chair Menor, and Councilmembers,<br><br>As a friend, long time past resident of O'ahu and a water drinker, I strongly support resolution 18-266 CD1 urging the U.S. Environmental Protection Agency and the Hawai'i Department of Health to reject the approval of a single wall tank upgrade alternative option and to reject the conclusions presented in the Groundwater Protection and Evaluation Considerations for the Red Hill Bulk Fuel Storage Facility.<br><br>Water is life. The Red Hill fuel tanks are the greatest risk to the security of O'ahu's drinking water and therefore the health of Hawai'i's people and its environment. Just 100 feet above our primary aquifer sits as much as 225 million gallons of fuel in 75 year old tanks. These tanks should have never been built here and they were not built to last forever. Today, the tanks are too fragile to be considered safe. According to the Navy's own data, the tanks' steel liners are corroding faster than the Navy expected and are as thin as half of the original steel plates. |

The Red Hill facility has a long history of leaking fuel into the surrounding environment and no amount of fuel in our groundwater supply is acceptable. The facility should be immediately upgraded with state-of-the-art secondary containment technology to ensure the tanks never leak again. If they cannot be upgraded to guarantee against leaks, the tanks should be retired and the fuel relocated away from our water resources.

Thank you for the opportunity to testify and for taking up this important measure at the council.

Sincerely,
Jim Pallett

1Click to share on Facebook (Opens in new window)1Click to share on Twitter (Opens in new window)
Categories 2019, Water Security
Tags city council, double walled, reso 18-266, retire red hill, secondary containment, shut it down
Post navigation
Editorial: Be vigilant about Navy fuel tanks
Hawai'i Gas Boiling Against Landmark Decision on Solar Water Heaters

| | |
|---|---|
| Testimony Attachment | |
| Accept Terms and Agreement | 1 |

**From:** CLK Council Info
**Sent:** Friday, March 08, 2019 9:03 AM
**Subject:** Council/Public Hearing Speaker Registration/Testimony

# Speaker Registration/Testimony

| | |
|---|---|
| Name | Sharlene Chun-Lum |
| Phone | 8083542434 |
| Email | sharstocks@yahoo.com |
| Meeting Date | 03-08-2019 |
| Council/PH Committee | Council |
| Agenda Item | Resolution 18-266, CD1 |
| Your position on the matter | Support |
| Representing | Self |
| Organization | |
| Do you wish to speak at the hearing? | No |
| Written Testimony | We need more than what the Navy has offered as a fix for Red Hill. Our citizens' health and safety will be endangered unless more stringent and timely action is taken. |
| Testimony Attachment | |
| Accept Terms and Agreement | 1 |

**From:** CLK Council Info
**Sent:** Friday, March 08, 2019 9:43 AM
**Subject:** Council/Public Hearing Speaker Registration/Testimony

# Speaker Registration/Testimony

| | |
|---|---|
| Name | Lasha-Lynn H. Salbosa |
| Phone | (808) 779-4620 |
| Email | lasha.lynn@gmail.com |
| Meeting Date | 03-08-2019 |
| Council/PH Committee | Council |
| Agenda Item | Resolution 18-266 CD1 |
| Your position on the matter | Support |
| Representing | Self |
| Organization | |
| Do you wish to speak at the hearing? | No |
| Written Testimony | Aloha Chair Kobayashi, Vice Chair Menor and Councilmembers,<br><br>I am a resident of East O'ahu, born and raised in Hawai'i. I strongly support Resolution 18-266 CD1. The issue of the Navy's Red Hill Fuel Tanks is one of the most important environmental issues facing the State of Hawai'i today. We must NOT be complicent anymore. There is far too much evidence of the Navy's fuel tanks endangering O'ahu's main source of groundwater supply. As our elected officials, I urge this Council to do the right thing for Hawai'i's residents and future generations— support Resolution 18-266 CD1.<br><br>Thank you for the opportunity to testify and for taking up this important measure at the Council.<br><br>Sincerely,<br>Lasha-Lynn H. Salbosa<br>Hawai'i Kai Neighborhood Board Member, Subdistrict-7 |
| Testimony Attachment | |
| Accept Terms and Agreement | 1 |

**From:** CLK Council Info
**Sent:** Friday, March 08, 2019 3:01 PM
**Subject:** Council/Public Hearing Speaker Registration/Testimony
**Attachments:** 20190308150057_Support_Reso_18-266_CD1.docx

# Speaker Registration/Testimony

| | |
|---|---|
| Name | Candace Fujikane |
| Phone | 808-393-5234 |
| Email | fujikane@hawaii.edu |
| Meeting Date | 03-08-2019 |
| Council/PH Committee | Council |
| Agenda Item | Resolution 18-266 CD1 |
| Your position on the matter | Support |
| Representing | Self |
| Organization | |
| Do you wish to speak at the hearing? | No |

Written Testimony

Council/PH Committee: Council/public hearing
Agenda Item: Resolution 18-266 CD1
Position: Support
March 8, 2019

Aloha Chair Kobayashi, Vice Chair Menor, and Councilmembers,
I strongly support resolution 18-266 CD1 urging the U.S. Environmental Protection Agency and the Hawai'i Department of Health to reject the approval of a single wall tank upgrade alternative option and to reject the conclusions presented in the Groundwater Protection and Evaluation Considerations for the Red Hill Bulk Fuel Storage Facility.
The Red Hill fuel tanks pose a catastrophic risk to O'ahu's drinking water, the health of the people, and the environment. These tanks should have never been built here, and they were not built to last forever. Today, the tanks are too fragile to be considered safe. The public knows that only 2 milimeters of steel stand between the toxic jet fuel and our drinking water. I understand that the Navy has balked at the cost of upgrading the tanks. The Red Hill facility has a long history of leaking fuel into the surrounding environment and no amount of fuel in our groundwater supply is acceptable. The facility should be immediately upgraded with state-of-the-art secondary containment technology to ensure the tanks never leak again. If they cannot be upgraded to guarantee against leaks, the tanks should be retired and the fuel relocated away from our water resources.
Thank you for your serious consideration.
Sincerely,

Candace Fujikane

Associate Professor of English
University of Hawai'i
Board member, KAHEA

| | |
|---|---|
| Testimony Attachment | 20190308150057_Support_Reso_18-266_CDI.docx |
| Accept Terms and Agreement | 1 |

Council/PH Committee: Council/public hearing
Agenda Item: Resolution 18-266 CD1
Position: Support
March 8, 2019

Aloha Chair Kobayashi, Vice Chair Menor, and Councilmembers,

I strongly support resolution 18-266 CD1 urging the U.S. Environmental Protection Agency and the Hawai'i Department of Health to reject the approval of a single wall tank upgrade alternative option and to reject the conclusions presented in the Groundwater Protection and Evaluation Considerations for the Red Hill Bulk Fuel Storage Facility.

The Red Hill fuel tanks pose a catastrophic risk to O'ahu's drinking water, the health of the people, and the environment. These tanks should have never been built here, and they were not built to last forever. Today, the tanks are too fragile to be considered safe. The public knows that only 2 milimeters of steel stand between the toxic jet fuel and our drinking water.

I understand that the Navy has balked at the cost of upgrading the tanks. The Red Hill facility has a long history of leaking fuel into the surrounding environment and no amount of fuel in our groundwater supply is acceptable. The facility should be immediately upgraded with state-of-the-art secondary containment technology to ensure the tanks never leak again. If they cannot be upgraded to guarantee against leaks, the tanks should be retired and the fuel relocated away from our water resources.

Thank you for your serious consideration.

Sincerely,

Candace Fujikane

Candace Fujikane
Associate Professor of English
University of Hawai'i
Board member, KAHEA

**From:** CLK Council Info
**Sent:** Friday, March 08, 2019 8:26 AM
**Subject:** Public Safety and Welfare Speaker Registration/testimony

# Speaker Registration/Testimony

| | |
|---|---|
| Name | Christopher Dean |
| Phone | 8088895862 |
| Email | topherdean1@gmail.com |
| Meeting Date | 03-07-2019 |
| Council/PH Committee | PublicHealth |
| Agenda Item | 18-266 CD1 |
| Your position on the matter | Support |
| Representing | Organization |
| Organization | Environmental Caucus of Democratic Party |
| Do you wish to speak at the hearing? | No |
| Written Testimony | Please uphold 18-266 in favor of removal of the dangerous fuel storage tanks. Please take the time to review the history of these kinds of decisions. The Corporation that built the Dakota Access Pipeline promised their pipeline would never leak. Within months a massive leak happened. British Petroleum promised they would do everything required to prevent a leak in the Gulf of Mexico. This is gambling, pure and simple. They're gambling to save a buck. They're wagering they'll save a little money against the destruction of our vital, precious, and dwindling drinking water. Would you make a wager of your home and everything you own against a dollar? It's insane. Once that aquifer is poisoned, that's it. So many horrible decisions have been made over the centuries all to save a few dollars. Please don't add this one to the list. Support 18-266 CD1 Thank you for your consideration. Aloha |
| Testimony Attachment | |
| Accept Terms and Agreement | 1 |

**From:** CLK Council Info
**Sent:** Friday, March 08, 2019 10:36 AM
**Subject:** Council/Public Hearing Speaker Registration/Testimony
**Attachments:** 20190308103554_712_MB___TPHmc___S011001524_1903081230000.pdf

# Speaker Registration/Testimony

| | |
|---|---|
| Name | Gina Hara |
| Phone | 8089412154 |
| Email | ginahara@gmail.com |
| Meeting Date | 03-08-2019 |
| Council/PH Committee | Council |
| Agenda Item | RES 18-266 |
| Your position on the matter | Support |
| Representing | Self |
| Organization | |
| Do you wish to speak at the hearing? | No |
| | Please see the following oversight:<br>The Dept of Health, to the consternation of the Board of Water, is allowing more Total Petroleum Hydrocarbons - TPH-d allowed from 100 parts per billion to 400 ppb (when 160ppb is the level where the smell of diesel becomes noticeable). The problem: More endocrine disrupting toxins are being allowed into the water, without an open public debate, and based on one-person/consultant or one department's discretion. Just as adding fluoride to water should be an open and public discussion, the multiplying of 4x the TPH-d allowed should be reviewed by the public, and why this happened should be investigated.<br>Thank you |
| Written Testimony | Related, see testimony regarding the reduction of the number of Chemicals of Potential Concern, eliminating the chain of data for byproducts of petroleum, and other heavy metals. Please investigate why the list of contaminants is being reduced vs increased or done more frequently in such a time.<br><br>FULL ORIGINAL DOCS ARE AT<br>http://www.boardofwatersupply.com/bws/media/redhill/doh%20letters/red-hill-ocr-bws-correspondence-doh-explanation-lowering-tph-d-eal-2018.pdf<br><br>Due to PDF size limitation, references and water quality report were removed |
| Testimony Attachment | 20190308103554_712_MB___TPHmc___S011001524_1903081230000.pdf |

DAVID Y. IGE
GOVERNOR OF HAWAII

181133

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

October 22, 2018

Mr. Ernest Y.W. Lau, P.E.
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

RE: Honolulu Board of Water Supply (BWS) Request to Hawaii Department of Health (DOH) for an Explanation of the Basis for the Increase in the Environmental Action Levels (EALs) for Total Petroleum Hydrocarbon Middle Distillate Fraction (TPH-d)

Dear Mr. Lau,

Thank you for your letter dated August 20, 2018, requesting clarification of the basis of 2017 updates to the Hawaii Department of Health's (HDOH) Environmental Action Level (EAL) for Total Petroleum Hydrocarbons (TPH) in groundwater that serves as a source of drinking water. Your question was specific to compounds associated with releases of middle distillate fuels such as diesel (TPHmd). Dr. Roger Brewer, Senior Environmental Scientist with the Hazard Evaluation and Emergency Response Office, has provided the following detailed technical response to your inquiry.

As discussed in the 2017 update of our office's EAL guidance, the increase in the HDOH drinking water action level for TPHmd from 0.10 mg/L to 0.40 mg/L was based on a review of original reference documents and a more up-to-date understanding of the physicochemical and toxicological nature of TPH-related compounds in groundwater following a release of fuel. Our office considers this action level to be highly conservative for screening of groundwater data at the majority of petroleum-release sites overseen by HDOH. Considerations incorporated into development of the TPHmd drinking water action level include:

- Use of an ingestion-based toxicity factor that reflects the most conservative value of recently published research for hydrocarbon compounds and their degradation products;

- Assumed continuous use of petroleum-impacted water source 350 days a year for a period of six years, reflecting the USEPA default, conservative exposure scenario for assessment of noncancer health hazards;
- No allowance for likely mixing and dilution of impacted groundwater with unimpacted groundwater as it is drawn into a production well.

The TPHmd action levels were revised to reflect the fact that hydrocarbon compounds measured in groundwater under this test method as well as related, biological degradation products are not significantly volatile. This negates the need to consider the risk posed by the inhalation of petroleum-related vapors during the use of tapwater.

The basis for this update was two-fold. "Diesel range" hydrocarbon compounds, typically considered to include compounds with 10 to 24 carbon molecules are, by definition, not considered to be significantly "volatile." This is why laboratory "extraction" methods are used to test for these compounds in groundwater (e.g., Method 8015-DRO). A focus of drinking water action levels for compounds collectively reported as "TPHmd" on ingestion only (i.e., drinking the water) is therefore appropriate. It is important to note that additional exposure via dermal absorption while bathing is insignificant in comparison to ingestion-based exposure.

"Gasoline range," volatile hydrocarbon compounds, normally characterized by having less than 10 to 12 carbon molecules, are collectively tested for and quantified as "TPHg" using "purge and trap" laboratory methods (e.g., Method 8015-GRO). Middle distillate fuels can contain small amounts of these compounds which, under some scenarios, can pose vapor emission concerns (Brewer et al. 2014). This requires that both TPHg and TPHmd be tested for at middle distillate release sites. Related volatile, degradation compounds, if present, would be captured by the same test method and incorporated into the reported concentration of TPHg. The HDOH drinking water action level for TPHg therefore considers inhalation of vapors during the use of tapwater for bathing, dishwashers, etc., in addition to direct ingestion of these compounds in drinking water (HDOH 2017; refer to Appendix 1, Section 8.5).

Hydrocarbon compounds are also highly susceptible to biological degradation once dissolved into groundwater and can be expected to rapidly degrade to oxidized, low-volatility "metabolites." These compounds will subsequently be reported as part of the non-volatile, TPHmd component of the impacted groundwater. This is why relatively high concentrations of TPHmd are often reported for groundwater samples collected at weathered, gasoline-only release sites and why both TPHg and TPHmd range contaminants should likewise be tested for under these scenarios. Degradation rates can be also expected to be enhanced in Hawaii in comparison to most areas of the mainland due to the relatively high, year-round temperature of the groundwater.

As one example, data for groundwater samples collected from immediately beneath the Red Hill Tank Farm complex tested with and without silica gel cleanup consistently indicate that the majority of TPH-related compounds present are heavily degraded (NAVFAC 2016, 2017, 2018). Volatile compounds collectively reported as TPHg were rarely detected in samples, and even when detected comprised less than 10% of the total, TPH-related compounds present.

It is possible that a higher percentage of dissolved-phase, volatile compounds could be present in groundwater immediately following a significant release of fuel, as you suggested in your letter. If so, then these compounds would again be captured and assessed as part of the TPHg data. In such cases it is important to consider and calculate the combined health risk posed by both TPHmd and TPHg, since cumulative risk is not considered in the individual action levels.

In conclusion, it is our opinion that drinking water action levels for both TPHg and TPHmd presented in the 2017 edition of the HDOH EAL guidance are highly protective of potential exposure to petroleum-impacted groundwater. HDOH staff are currently working with local experts and experts on the mainland to identify better test methods to quantify the "TPHmd" component of heavily degraded, petroleum-related compounds. Additional guidance on this subject will be forthcoming.

Should you have questions or require further technical clarification, please contact Dr. Brewer or Fenix Grange at the Hazard Evaluation and Emergency Response Office at (808) 586-4249 or by email at roger.brewer@doh.hawaii.gov or gabriella.grange@doh.hawaii.gov.

Sincerely,

BRUCE S. ANDERSON, Ph.D.
Director of Health

c: Steven Linder, United States EPA Region IX
Mark Manfredi, NAVFAC Hawaii

Attachment: Board of Water Supply letter dated August 20, 2018

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com



August 20, 2018



Dr. Bruce S. Anderson
Director
State of Hawaii
Department of Health
1250 Punchbowl Street
Honolulu, Hawaii 96813

Dear Dr. Anderson:

Subject: Honolulu Board of Water Supply (BWS) Request to Hawaii Department of Health (DOH) for an Explanation of the Basis for the Increase in the Environmental Action Levels (EALs) for Total Petroleum Hydrocarbon Middle Distillate Fraction (TPH-d)

In November 2017, the DOH raised its groundwater EALs for TPH-d. The TPH-d EAL based on health protection was increased from 160 micrograms per liter (µg/L) to 400 µg/L and the EAL based on odor or taste was increased from 160 µg/L to 500 µg/L (DOH 2016, 2017).

These EALs are amounts of TPH-d in water that DOH considers to be "safe" for drinking water and household use of tap water. An increase in TPH-d EALs means that DOH is now allowing more TPH-d in tapwater at what it regards as a safe level.

The BWS considers these EALs for certain constituents that do not have drinking water standards to help ensure that the water we provide our customers is safe and free of objectionable qualities. Consequently, the BWS respectfully requests a detailed explanation of the scientific basis of these changes in TPH-d EALs. This will greatly assist us in responding to public comments and concerns regarding the safety and quality of our water.

The DOH (2017) report (Volume 2, Appendix 1, Section 6.6, p. 6-12, pdf page 66) states that the reason for the EAL increase is because:

> *...petroleum-related compounds reported in this range will be dominated by non-volatile, degradation compounds or "metabolites" of biogenic origin (Zemo*

*et al. 2013, 2016). The resulting action level is therefore based on ingestion only and does not incorporate an inhalation pathway.*

In other words, DOH is assuming that TPH-d in tapwater will be almost entirely changed into a form that will stay in the water such that it will not be released into the air nor will it be absorbed through the skin. DOH thus appears to assume TPH-d will not get into the human body by breathing it or by taking it up through the skin while showering, bathing, or washing dishes. By assuming less exposure from these sources, DOH is effectively allowing more TPH-d in drinking water at the higher EAL concentration. However, the studies used to support this assumption (Zemo et al. 2013, 2016) are studies of historical TPH release sites on the mainland.

The BWS has concerns about using TPH-d analyses from the mainland in the establishment of a TPH-d EAL for use in Hawaii. TPH-d in local groundwater may travel faster from a release to drinking water wells because of Hawaii's more hydraulically conductive volcanic soils and rock. As a result, there may also be less time for TPH-d to degrade into forms that stay in the water, particularly for sites with recent or ongoing releases.

The BWS would like to know whether the DOH considered in its evaluation the unique subsurface conditions in Hawaii that differ from those at petroleum release sites on the mainland. Please provide your data and analyses from sites in Hawaii, including those with recent or ongoing releases, that support DOH's key assumption of near 100% change of TPH-d into a form that results in less exposure.

Thank you for your assistance with this request. If you have any questions, please contact Mr. Erwin Kawata, Program Administrator of the Water Quality Division at (808) 748-5080.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

cc: Mr. Steve Linder, United States Environmental Protection Agency, Region IX
Mr. Mark Manfredi, NAVFAC Hawaii

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com



August 20, 2018

Dr. Bruce S. Anderson
Director
State of Hawaii
Department of Health
1250 Punchbowl Street
Honolulu, Hawaii 96813

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*et al. 2013, 2016). The resulting action level is therefore based on ingestion only and does not incorporate an inhalation pathway.*

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Thank you for your assistance with this request. If you have any questions, please contact Mr. Erwin Kawata, Program Administrator of the Water Quality Division at (808) 748-5080.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

cc: Mr. Steve Linder, United States Environmental Protection Agency, Region IX
Mr. Mark Manfredi, NAVFAC Hawaii

DAVID Y. IGE
GOVERNOR OF HAWAII

191316

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

September 14, 2018

U0911RT

Mr. Ernest Y.W. Lau, P.E.
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Lau:

SUBJECT: BWS Letter Dated July 19, 2018

The Department of Health (DOH) has received your letter dated July 19, 2018. You made a request for increased monthly frequency of groundwater sampling at the Navy's Red Hill Shaft to eliminate or improve imprecision and uncertainty in laboratory analytical methods. From April 2016 to October 2017 there were 13 groundwater sampling events at Red Hill Shaft, including 10 consecutive monthly groundwater sampling events from October 2016 to July 2017.

Total Petroleum Hydrocarbons as diesel (TPH-d) were detected at 14 ug/L (parts per billion [ppb]) in the December 2016 sample and 65 ppb with a duplicate sample that was non-detectable for TPH-d in October 2017. TPH-d was non-detectable in all other Red Hill Shaft water samples during these 13 sampling events. In addition, TPH-d was non-detectable in both the primary and duplicate samples of March 2018. Therefore, the DOH concludes that additional monthly sampling is unwarranted at this time.

Regarding your request for the detailed rationale used by the DOH to increase the taste and odor threshold of TPH in drinking water, including data, the DOH refers you to a detailed discussion in Section 6.5 of the Fall 2017 Environmental Hazard Evaluation guidance, available on our website:

HIDOH, 2017, *Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater – Hawaii Edition* (Fall 2017): Hawai'i Department of Health, Office of Hazard Evaluation and Emergency Response.
http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/EALs.

Technical assistance and review of this document was provided by members of the TPH Risk Group of the *Interstate Technology and Regulatory Council*, a national group of regulators and consultants concerned with the preparation of technical guidance on the assessment of petroleum contamination in the environment.

Your questions on the Navy's 2018 Consumer Confidence Report for Joint Base Pearl Harbor-Hickam will be forwarded to them for comment.

If you have any questions, please contact Ms. Roxanne Kwan of the Solid and Hazardous Waste Branch at (808) 586-4226.

Sincerely,

BRUCE S. ANDERSON, Ph.D.
Director of Health

c: Mr. Steven Linder, Environmental Protection Agency
Mr. Stephen Anthony, U.S. Geological Survey
Mr. Mark Manfredi, NAVFAC Hawaii

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com



July 19, 2018

Dr. Bruce S. Anderson
Director
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Dear Dr. Anderson:

Subject: United States Navy (Navy) Calendar Year 2017 Fourth Quarter (2017 Q4) Groundwater Monitoring Well Test Results - Department of Health (DOH) Letter dated June 18, 2018

Thank you for your June 18, 2018 letter (DOH, 2018) in response to our letter dated April 26, 2018 (Lau, 2018). The subject of these letters is the Department of the Navy (Navy) 2017 4th Quarter (Q4) groundwater monitoring results from monitoring wells in and around the Red Hill Bulk Fuel Storage Facility (RHBFSF). The Q4 results show the level of total petroleum hydrocarbon as diesel (TPH-d) in Red Hill Monitoring Well No. 2 (RHMW02) increased to 1,600 parts per billion (ppb) compared to the previous quarter. Increases in TPH-d levels were also recorded in RHMW03 (210 ppb) and Red Hill Shaft (65 ppb) in addition to the oily waste disposal facility monitoring well No. 1 (OWDFMW01) site (110 ppb). Red Hill Shaft sample designation is RHMW2254-01.

In your letter dated June 18, 2018, the DOH stated "the concentration of TPH-d detected at Red Hill Shaft of 65 ppb in October 2017 does not meet or exceed the DOH environmental action level or federal drinking water standards. In addition, a duplicate groundwater sample was collected from this source at the sampling event and TPH-d was not detectable with a 25 ppb minimum detection limit. Therefore, the DOH is not requiring additional action from the Navy at this time."

The Honolulu Board of Water Supply (BWS) has reviewed the analytical results from the primary and the duplicate groundwater samples collected from Red Hill Shaft during Q4. The tables indicate the primary and duplicate samples (designated as ERH409 and ERH 410, respectively) were both collected on October 24, 2017. The Navy stated in their report "The field duplicate imprecision indicate that sampling bias may exist in the collected sample volumes, but that the exact nature of the bias (high or low) cannot be determined due to the nature of the Relative Percent Difference (RPD) exceedance

(RPD = 200%). Due to this imprecision, there is uncertainty in the true concentrations of the TPH-d for this sample." (Navy, 2018). The Navy provided further comments in the DOH letter, stating the 2018 Q1 results for Red Hill Shaft were also non-detects (DOH, 2018).

The BWS strongly recommends collecting and testing additional samples to resolve the sampling bias, imprecision and uncertainty issues expressed by the Navy. The collection and testing of additional samples is a best practice for reconciling the presence or absence of contaminants. If those subsequent tests confirm the contaminant is present, then increasing the testing frequency is prudent (i.e. monthly) to track any long-term changes in the values.

The Navy's fourth quarter 2017 cumulative groundwater results show past detections of TPH-d in Red Hill Shaft. On June 28, 2005, three samples were collected and recorded TPH-d levels of 43 ppb, 67 ppb and 58 ppb. On September 8, 2005, 43 ppb was detected. On December 6, 2005, two samples detected 38 and 24 ppb respectively. On January 20, 2016, 20 ppb was detected. We believe these historical detections warrant monthly testing given Red Hill Shaft is an important drinking water source to Joint Base Pearl Harbor Hickam (JBPHH). On December 13, 2016, the BWS sent a letter to DOH transmitting the results of two independent studies the BWS commissioned to determine screening levels for TPH-d in drinking water. Both studies calculated values that were very consistent with DOH's TPH-d gross contamination (taste and odor threshold) environmental action limit (EAL) of 100 ppb and TPH-d Drinking Water Toxicity EAL of 160 ppb. In Fall 2017, the DOH relaxed these EALs by raising them to 500 ppb and 400 ppb, respectively. The BWS would like to know the detailed basis DOH used to relax the EAL standard and receive a copy of the data used to make its decision. The BWS believes the previous DOH EALs were protective of the environment, and human health and relaxing the EALs is a backsliding that is not in the best interest of our community. The BWS urges the DOH to reconsider and reinstate the 100 ppb and 160 ppb EAL values.

Finally, the Navy's 2018 Consumer Confidence Report (CCR) for JBPHH reports 65 ppb as the highest level of TPH-d detected in Red Hill Shaft for voluntary testing performed in 2017, on page 4 of the CCR (copy enclosed for reference). Where did the 65 ppb value come from? Did it come from the duplicate sample collected on October 24, 2017? This is the only detection recorded in calendar year 2017 based on the Navy's fourth quarter 2017 cumulative groundwater results shown on the DOH website. However, the Navy states, "there is uncertainty in the true concentrations of the TPH-d for this sample." (Navy, 2018). If so, then why does a Navy CCR report imprecise results to the Navy's customers? If not, is the Navy reporting a precise 65 ppb result in its CCR that was not included in the Navy's fourth quarter 2017 cumulative groundwater results report? Can you please clarify?

Thank you for the opportunity to comment. If you have any questions, please call Mr. Erwin Kawata, Program Administrator of the Water Quality Division at (808) 748-5080.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

cc: Mr. Steve Linder, United States Environmental Protection Agency, Region IX
Mr. Stephen Anthony, United States Geological Survey
Mr. Mark Manfredi, NAVFAC Hawaii, Red Hill Regional Program Director/Project Coordinator

Enclosure

References

Board of Water Supply (BWS). 2018. United State Navy (Navy) Calendar Year 2017 Fourth Quarter (2017 Q4) Groundwater Monitoring Well Test Results available on the Department of Health (DOH) Web Site dated January 18, 2018. Letter from Mr. Ernest Y.W. Lau to Dr. Virginia Pressler, M.D. April 28.

Department of Health (DOH). 2018. U.S. Navy, 2017 Fourth Quarter Groundwater Monitoring Well Test Results. Letter from Dr. Bruce S. Anderson, Director of Health to Mr. Ernest Y.W. Lau. June 18.

Department of the Navy (Navy). 2018. Final Fourth Quarter 2017 – Quarterly Groundwater Monitoring Report, Red Hill Bulk Fuel Storage Facility. Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i, DOH Facility ID No.: 9-102271; DOH Release ID Nos.: 990051, 010011, 020028, and 140010. Naval Facilities Engineering Command Hawaii (NAVFAC Hawaii). Contract Number N62742-12-D-1829, CTO 0053. January.

Kriebel, David; Tickner, Joel; Epstein, Paul; Lemons, John; Levins, Richard; Loechler, Edward L.; Quinn, Margaret; Rudel, Ruthann; Schettler, Ted; and Stoto, Michael (Kriebel et al.). 2001. *The Precautionary Principle in Environmental Science.* Environmental Health Perspectives. Volume 109. Number 9. September.

**From:** CLK Council Info
**Sent:** Sunday, November 10, 2019 2:28 PM
**Subject:** Council/Public Hearing Speaker Registration/Testimony

# Speaker Registration/Testimony

| | |
|---|---|
| Name | MaryBrandt |
| Phone | 808 595-7465 |
| Email | mb96817@yahoo.com |
| Meeting Date | 12-01-2019 |
| Council/PH Committee | Council |
| Agenda Item | : Resolution 18-266 |
| Your position on the matter | Support |
| Representing | Self |
| Organization | |
| Do you wish to speak at the hearing? | No |

Written Testimony

Council/PH Committee: Council/public hearing
Agenda Item: Resolution 18-266
Position: Support

Aloha Chair Martin, Vice Chair Pine, and Councilmembers,

"Imagine a day without water" was the title of the article in the Honolulu Star Bulletin by chair of the Fresh Water Council, which advocates for conserving our island fresh water. The article ends with these words: "Let's invest in our water system now..." The Council did not imagine that we would have to protect our fresh water from contamination by the Navy's WWII fuel tanks. And the Navy's plan has simple monitoring of these tanks and routine maintenance of them that did not prevent leaking in the recent past. We must not only conserve, invest but also protect.

I therefore strongly support resolution 18-266 urging the U.S. Environmental Protection Agency and the Hawai'i Department of Health to reject the approval of a single wall tank upgrade alternative option and to reject the conclusions presented in the Groundwater Protection and Evaluation Considerations for the Red Hill Bulk Fuel Storage Facility.

Oahu's primary source of drinking water should not continue to be

put at risk as it is now due to the fragile and antiquated Red Hill fuel tanks.

The Red Hill facility has a long history of leaking fuel into the surrounding environment and the facility should be immediately upgraded with state-of-the-art secondary containment technology to ensure they never leak again. If they cannot be upgraded to guarantee against leaks, the tanks should be retired.

We should not have to imagine a day without drinking water.

Thank you for the opportunity to testify and for taking up this important measure at the council.

Sincerely,
Mary E Brandt

| | |
|---|---|
| Testimony Attachment | |
| Accept Terms and Agreement | 1 |

IP: 192.168.200.67